UCI ENGINEERING, INC.

CASTLE BEACH CLUB CONDO
UCI Project No. 0407-121

FIELD INSPECTION REPORT No. 2

To:	Mr. Leo Gonzalez	Report Date:	November 16th, 2004
From:	Oscar Castells	Visit Date:	November 5th, 2004
Project:	CASTLE BEACH CLUB CONDO	Address:	5445 Collins Avenue
Proj. No.:	0407-121		Miami Beach, Florida
Ref:	**RECOMMENDATIONS REGARDING EXISTING BUSDUCTS, SWITCHGEAR AND MOTOR CONTROL CENTERS**		

COMMENTS AND RECOMMENDATIONS:

Main Switchgear Room:

1) As stated in the previous field inspection report, the effect of water old spillages is easily noticed on the outside cover of three larger circuit breakers (4000A, 4000A and 2500A).
2) The measurements of surface temperatures done on a previous visit, showed no signs of over-heating in any of the existing breakers (one of them is for emergency service and was not electrically loaded.
3) During this second field visit, further visual inspection was done to the inside of the three mentioned main circuit breakers finding evidence of green stains on the copper buses of two of the switches.
4) Because of the age and present condition of the breakers it is risky to assure, without laboratory testing that they will operate correctly during an overload or short circuit event.
5) The laboratory tests will demand at least, to disconnect the breakers, creating a power-off condition to the Condominium. To minimize the affectations, temporary breakers will need to be installed. Therefore, at the end it will be less expensive and less problematic for the Condo operation, to replace by new ones, the three already mentioned existing main breakers.

Recommendations:

1) To provide new main circuit breakers in the main SWGR room, replacing the existing old ones.
2) To eliminate by demolition and/or re-routing to outside of the main SWGR room, all the existing water pipes (either active or not) presently running above the electrical gear.
3) To seal adequately all ceiling slabs and wall penetrations into the main SWGR room.

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Bus-ducts inside and outside of the Main Switchgear Room:

1) As stated in the previous field inspection report, stains and rust (sometimes very heavy) on the outside cover of the installed bus-ducts is easily noticeable in several areas of the existing bus-ducts.
2) The temperature measurements previously done on the bus-ducts outer cover surface, showed no signs of over-heating in general, with two or three points (on connection joints) showing a 10 degrees differential of temperature on points 3 feet apart along the bus.
3) During this second field visit, further visual inspection was done on the outer cover of the bus-ducts, mainly in the parking garage, and while looking from below through construction holes to the inside of the bus-ducts, rust and moisture was easily noticeable.
4) Then at least in the basement, the extent of the rusting inside the bus-ducts could be large, but cannot be determined without disconnecting the power to each bus-duct to then open the cover all along the bus-duct length.
5) The operational conditions of each bus-duct, mainly insulation to ground and insulation between phases, cannot be tested without previously disconnecting the power to then open the covers.
6) Because of the age and present condition of the more than 500 ft length of existing bus-ducts it is risky to assure, without due testing that the rust debris are not creating an insulation decaying process that could end in current leaks and even short circuits risky to the building and its occupants, even more when combined with the un-known operational condition (will they trip if required?) of the circuit breakers in the main SWGR room.

Recommendations:

1) To provide new electrical wire and conduit feeders to replace all the existing bus-duct runs.
2) To remove all the existing bus-ducts runs once replaced.
3) To seal adequately all ceiling slabs penetrations on top of the new conduits runs.
4) Bus-way No.1: Originates in a 4000A circuit breaker. Has a total length of approximately 30ft.
5) Bus-way No.2: Originates in a 4000A main circuit breaker. Has a total length of approximately 30ft.
6) Bus-way No.3:Originates in a 2500A main circuit breaker. Has a total length of approximately 300ft.
7) Bus-way No. 4: Originates in the FPL vault and has a total length of approximately 70' along its route to the storage room right in front of the emergency generator room.

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Emergency Generator:

1) The emergency generator room is located in a poorly ventilated room in the basement garage level.
2) The emergency generator cooling system consists in a direct connection to a water main pipe, with no apparent water recirculation.
3) There is no Automatic Transfer Switch (ATS) to automatically detect a power outage, start the generator engine and reconnect to emergency service the required life safety loads.

Recommendations:

1) Perform a load bank test of the generator to evaluate its present condition, including the sufficiency of its existing ventilation and cooling systems.
2) Provide any improvement that may be required as a result of the generator load bank test.
3) Provide an adequate ATS to automatically detect power outages, start the generator engine and transfer the life safety loads from normal to emergency power.

Motor Control Centers (MCC) on the Lower Lobby Electromechanical Room:

1) There are three old MCC in the electromechanical area in the lower lobby level are. Two of them installed back to back have several cubicles abandoned, and a few cubicles in use but without cover and with wires exposed.
2) The double MCC has no housekeeping pad and is located nearby to the fire pump and other water pumps. It is evident that water spillages from the pumps have reached the area of the MCC rusting the lower part of the cabinets and probably leaking down to the lower level through the electrical conduits penetrating through the slab.

Recommendations:

1) To provide new MCC's to replace the existing old ones.
2) To provide 4" high housekeeping pads for each new MCC.
3) To provide a low cement bump to contain water spillages from the fire pump and prevent it to reach the MCC area.

END OF COMMENTS AND RECOMMENDATIONS

Encl. Photographs 1 to 12

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PHOTOGRAPHS

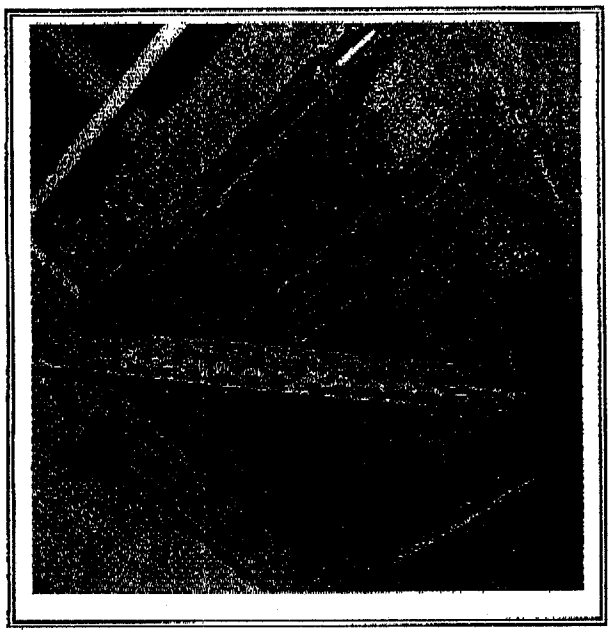

Photo No. 1: Main Switchgear Room
See rust

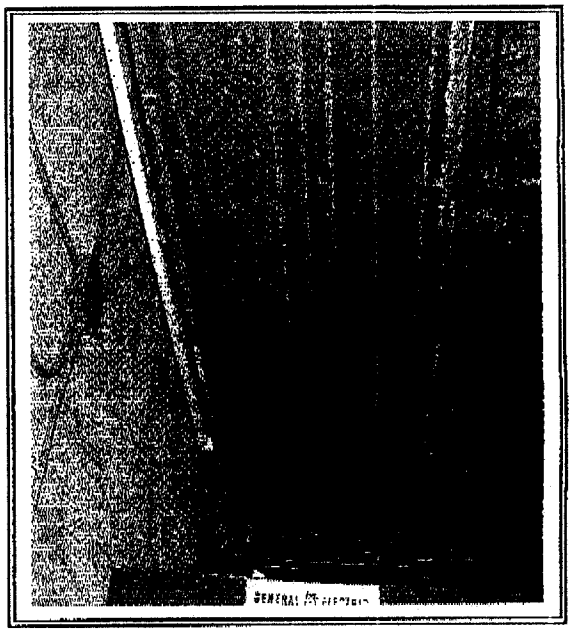

Photo No. 1: Main Switchgear Room

Photo No. 3

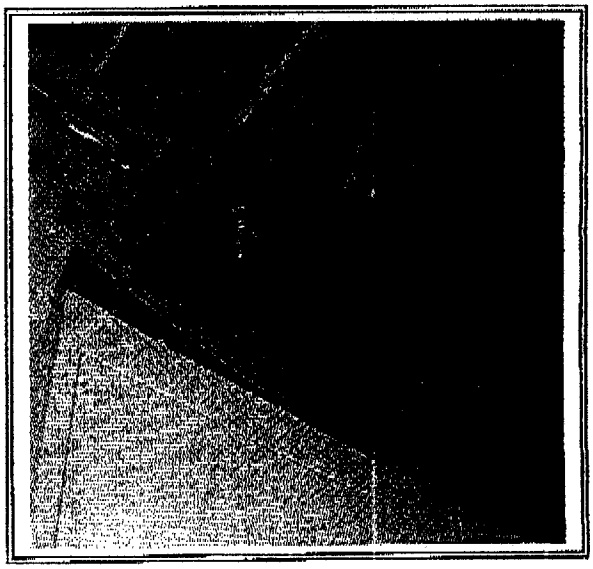

Photo No. 4

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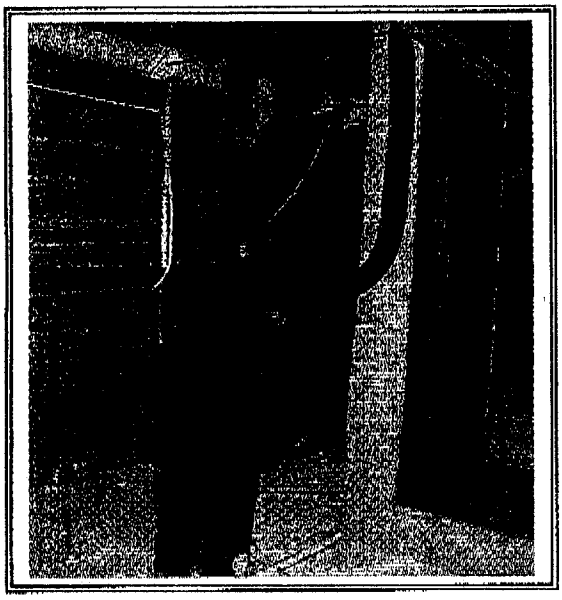

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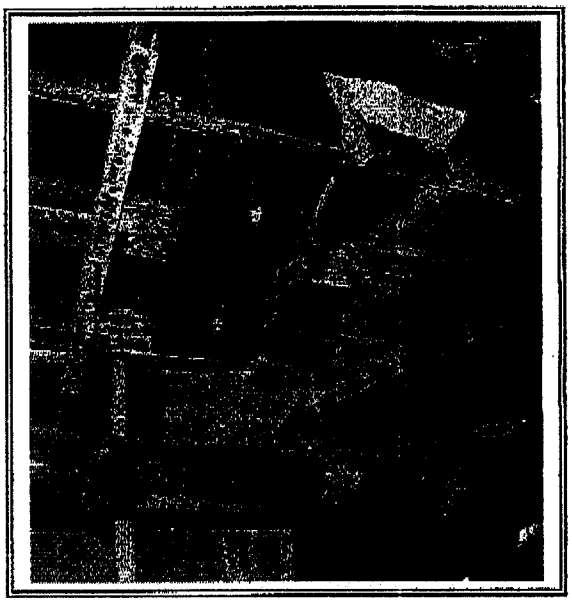

Photo No. 6
See rust and against code installation

Photo No. 7:
See signs of old leaks

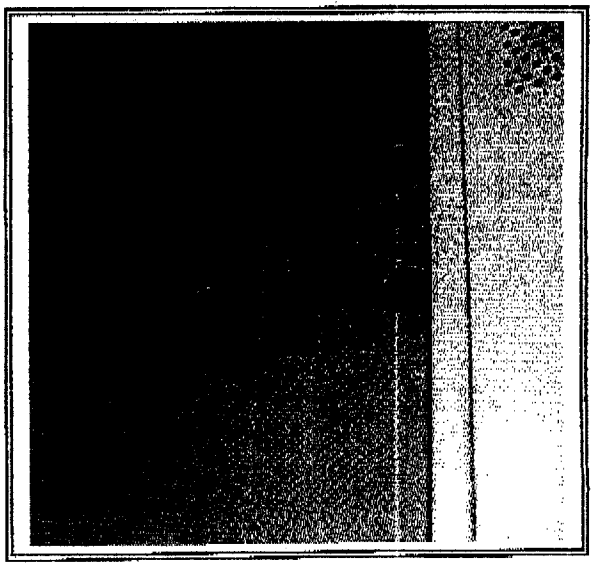

Photo No. 8
Covers required

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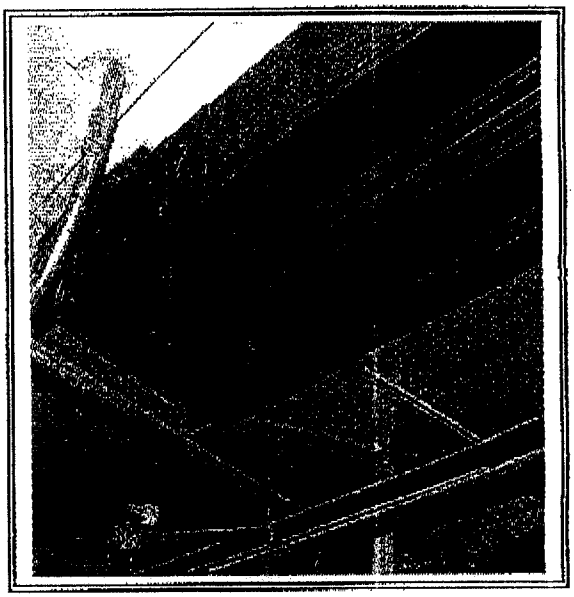
Photo No. 9
Generator Cooling Water Connection



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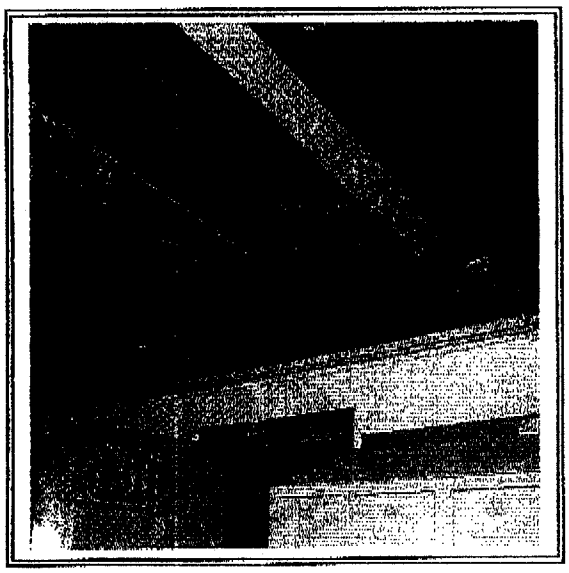

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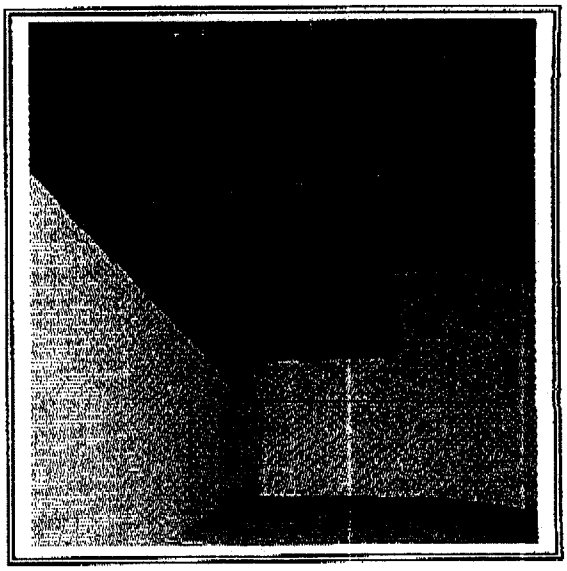

Photo No. 12
See rust signs

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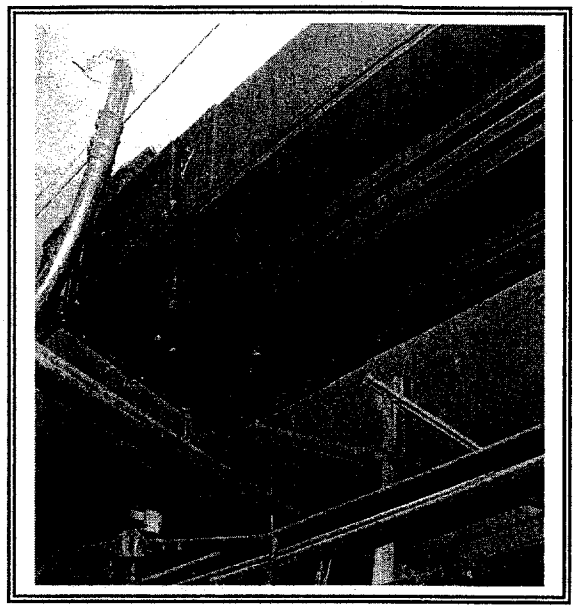

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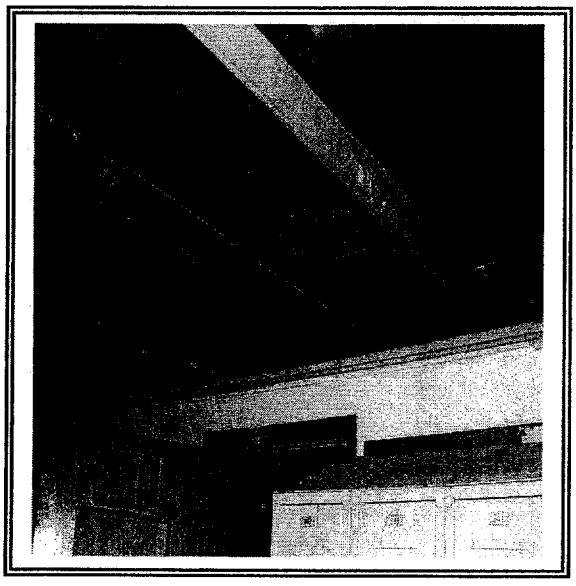

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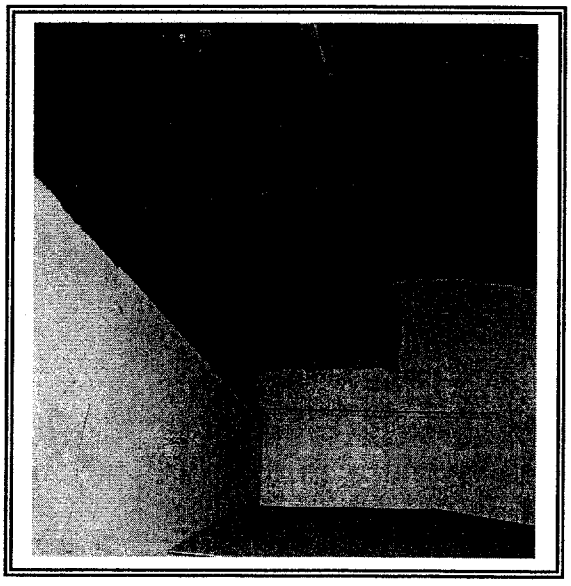

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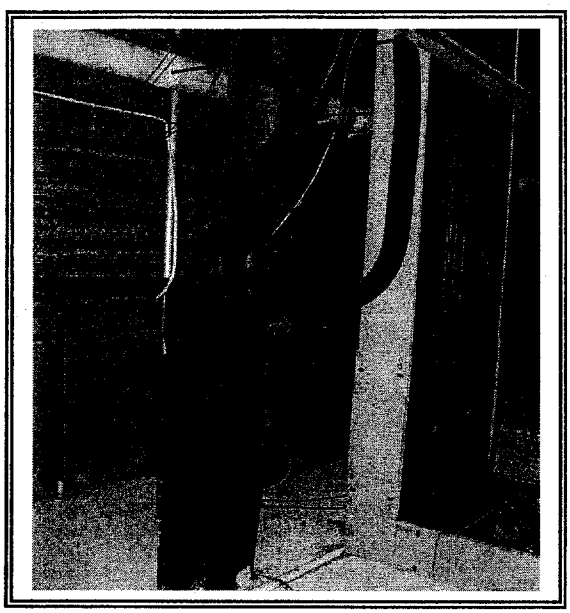

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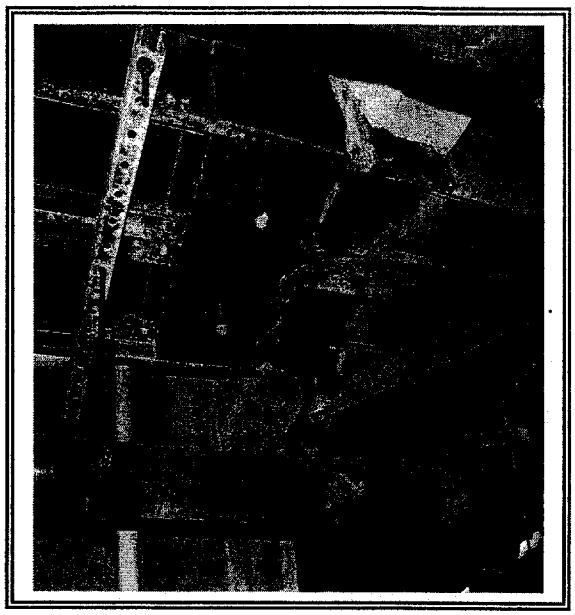

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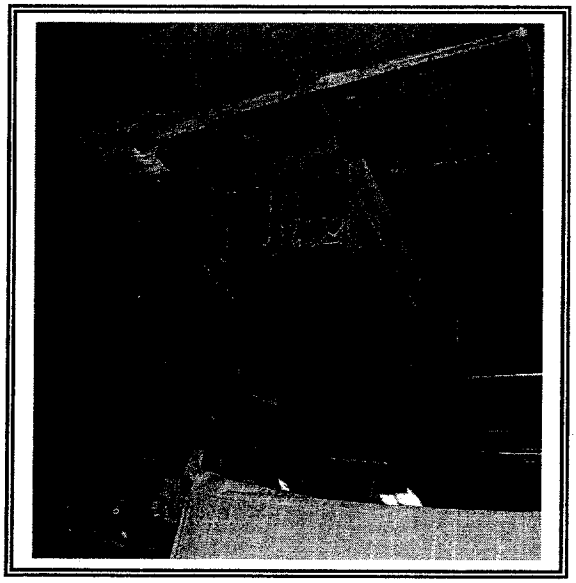
See rust and against code installation



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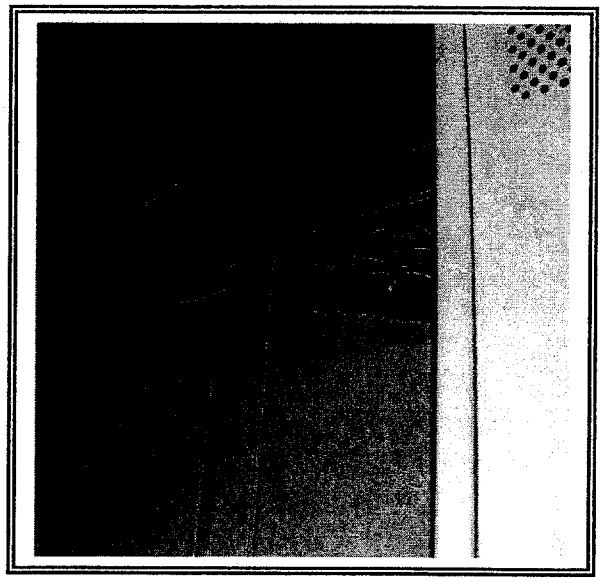

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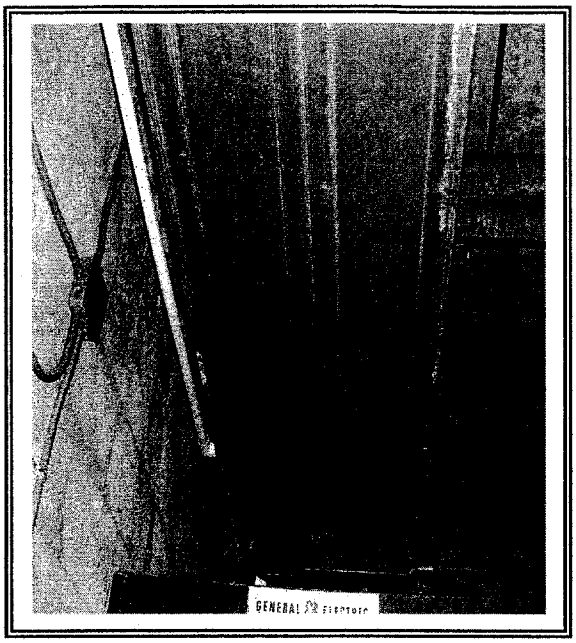

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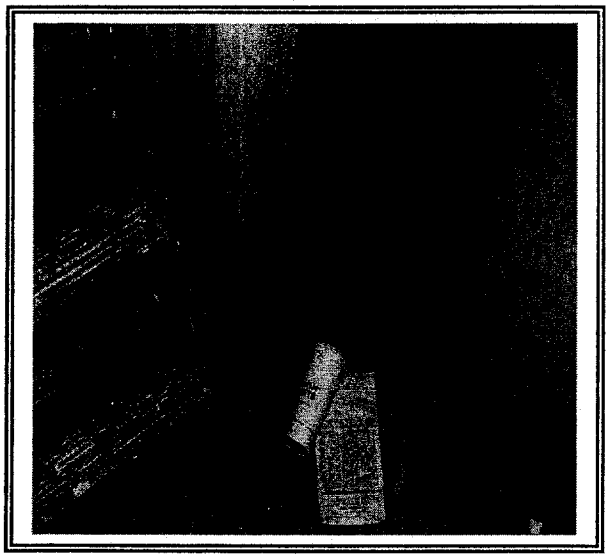

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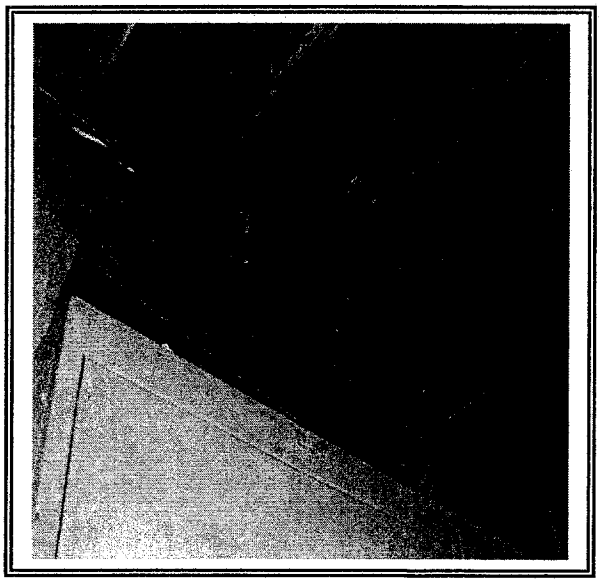

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